Shira Epstein
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Director of Campus Makerspaces at UMass Amherst
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Professional Experience

- Director of Campus Makerspaces, UMass Amherst
  https://sites.google.com/umass.edu/umassmakerspace — August 2018 -
- Lecturer, Dept. of Electrical & Computer Engineering. UMass Amherst — August 2018 -
  - Course co-coordinator, Senior Design Project ECE 415, ECE 416 — Fall 2021 -
  - Instructor, Faculty First Year Seminar FFYS 191ENG13, Makerspaces at UMass Amherst — Fall 2020, 2021
  - Co-instructor, SPP 597M: Makerspace Leadership I & II — Fall 2020
  - Instructor, Honors 391AH: Electronics for Research & Prototyping — Spring 2022
- Engineer-in-residence, M5 UMass Amherst Makerspace — 2017 - 2018
- Adjunct Instructor, Hampshire College
  - Creative Electronics IA-0116 — Fall 2017, 2018
  - Introduction to Robotics IA-0253 — Spring 2017
- Wisconsin Center for Academically Talented Youth
  - Instructor: “Advanced Topics in Computer Science” Grades 9-12 — 2016, 2017
  - Instructor: “Engineering Missions and Design Challenges” 7-8 — 2016
  - Course Materials Editor — 2017
- Electrical and Software Engineer, Quietyme — 2015-2016
- Duke Talent Identification Program Robotics Instructor (4 terms) — 2014-2015
- University of Michigan-Ann Arbor graduate student researcher/lab manager — 2012-2013
  Biologically Inspired Robotics and Dynamical Systems Lab
  Modular robotics design, coordination of care for animal specimens
- Independent Contractor — 2011 -2017
  - Selected Clients: SnowShoe, FeLion, Kyoto Sangyo University
- Teamcore Group Undergraduate Student Researcher, USC — 2009-2011
- Perceptronics Solutions Undergraduate Student Researcher, USC — 2008-2009

Interests & Skills

- Makerspaces and education
- Rapid prototyping and fabrication
- Electronic hardware and embedded systems
- Programming: Python, C, C++, Javascript, Processing, MATLAB, OpenSCAD
- Design Software: Blender, FreeCAD, Inkscape, CorelDraw, GIMP, Adobe Creative Suite

Education

- University of Michigan-Ann Arbor, Sept. 2012 - Nov. 2013, PhD program, no degree
- University of Southern California, Sept. 2008 – May 2012, B.S. in Electrical Engineering
- Milken Community High School, Sept. 2004 – June 2008

Certifications

- NFPA Hot Work Safety Certificate program
- Arts, Crafts, & Theater Safety program taught by industrial hygienist Monona Rossol

Volunteer Teaching and Mentorship

- HackUMass mentor, judge, volunteer organizer, and workshop instructor 2017 -
- Coach for FIRST Robotics Team at East High School, Madison WI 2016-2017
- Madison Science Symposium Mentor 2016, 2017
- Madison Area Technical College Robotics Course Adviser and Project Judge 2016, 2017
- Sector67 Afterschool Science Club Program Mentor 2016
- UW-Madison MadHacks + WACM Hackathon Judge 2016
- Madison Science Festival Robot Zoo Exhibit Creation/Installation 2015, 2016
- Tormach Science Festival Exhibit Creation/Installation 2016
- Sector67 Intro to 3D Art with Blender Class Instructor 2016
- UW-Madison IoT Lecture Series Final Project Judge 2015
- Madison Science Museum Robotics Exhibit Creation/Installation 2015
- UW-Madison MOARbots Robotics Independent Study Instructor 2015
- Invited Talk UW-Madison Computer Sciences Department 2014
  Title: “A Low-Cost, Open Source, Autonomous Robot Platform”

Projects of Note

More projects and documentation available at buildingfriends.blogspot.com

- Ventilator cable extension, team project during COVID-19 pandemic 2020
- Theta* RRT Implementation in Python for steering a virtual bicycle
  Course project for CMPSCI 603: Robotics Spring 2019
- Makerspace Inventory System using Google Sheets, Google Web Apps Script 2018
- Event RSVP System using Google Forms, Google Scripts 2017
- A* Based Path Planning for Nonholonomic Robots in Presence of Obstacles 2017
- “Talking Calipers” and Other Tool Accessibility for the Visually Impaired 2017
- “Metasystem Transition” Graphic novel using computer generated imagery 2016 - present
- MOARbots (Modular, Open Source, Affordable Robots) 2014 - present
- 3D Printed Parametric Magnetic Tile Polyhedra 2015 - present
- Fingerpaint. C++ OpenCV application for drawing to the screen with a webcam 2009
- Gait Optimizer Framework for BIRDS Lab at the University of Michigan 2012-2013

Awards

- UMass IEEE Tesla Award (student choice), Most Outstanding Junior Faculty 2019
- Infosys Infy Maker Award, $10k for “Talking Calipers” project 2017
- University of Southern California Leadership Scholarship, $10k/year for 4 years 2008-2012
- Women in Science & Engineering Research Fellowship, $2.5k twice 2011, 2012
- Research Experience for Undergraduates, USC. $1.1k + room and board 2010
- Madison SOUP Community Voted Microgrant, “Project MOARbots,” $500 2015
- Viterbi School of Engineering Dean's List 2008-2010